



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

AS

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/758,741	01/11/2001	Vincent Leroux	1366 US	9031

25105 7590 10/11/2002

VESUVIUS CRUCIBLE COMPANY
27 NOBLESTOWN RD
CARNEGIE, PA 15106-1632

EXAMINER

DICUS, TAMRA

ART UNIT	PAPER NUMBER
----------	--------------

1774

6

DATE MAILED: 10/11/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

AS-6

Office Action Summary

Application No. 09/758,741	Applicant(s) LEROUX ET AL.	
Examiner Tamra L. Dicus	Art Unit 1774	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 July 2002 (amendment).
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. This Office Action is responsive to the amendment filed July 10, 2002. The rejection of claims 1 and 3 under 35 U.S.C. 102(b) as being anticipated by USPN 4,951,852 to Rancoulle and claims 1-6 are under 35 U.S.C. 103(a) as being unpatentable over USPN 4,951,852 to Rancoulle in view of USPN 5,370,370 to Benson are maintained. Reiteration of the rejection is stated below.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1 and 3 are rejected under 35 U.S.C. 102(b) as being anticipated by USPN 4,951,852 to Rancoulle.

Rancoulle discloses a refractory article such as a nozzle for use in the casting of molten metal comprising a refractory piece having a first outer surface, an insulating coating having a second surface covering a portion of the first outer surface (insulative coating is present on exterior and interior surfaces of nozzle), and a glaze covering a portion of the second outer surface (glaze surface interfacing insulative coating) (see patented claims 2, 4, and 5).

The limitations of claims 1 and 3 are met.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-4 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 4,951,852 to Rancoulle in view of USPN 5,370,370 to Benson.

Rancoulle discloses a refractory piece (article/body), such as a nozzle for use in the casting of molten metal comprising a refractory body having a first outer surface, an insulating coating having a second surface covering a portion of the first outer surface (insulative coating is present on exterior and interior surfaces of nozzle), and a glaze covering a portion of the second outer surface (glaze surface interfacing insulative coating) (**see patented claims 2, 4, and 5**).

Rancoulle is silent to such a piece comprising a carbon-bonded refractory composition. Benson discloses a carbon-bonded, oxide refractory body in the form of a nozzle for use in casting molten metal, such as aluminum-killed steel (see col. 5, line 12+), where the exterior body surface is coated with a glaze of a glass forming frit material (see col. 6, line 20+). Benson discovered that a carbon-bonded, oxide refractory material such as carbon-bonded alumina graphite in the form of a nozzle can be used to form an anti-buildup liner which is resistant to carbon monoxide gas and resistant to the formation and buildup of alumina (see col. 5, line 12+). Benson applies a glaze to the body to protect the exterior surface of the body against oxidation during firing of the nozzle (see col. 6, line 24+). Therefore it would be obvious to one with

Art Unit: 1774

ordinary skill in the art to produce a carbon-bonded refractory piece comprising a glaze composition resistant to oxygen diffusion to obtain the properties of an anti-buildup liner and protect the nozzle body against oxidation during firing. No patentable distinction is seen.

6. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 4,951,852 to Rancoulle as applied to claims 1-4 and 6, and further in view of USPN 5,602,063 to Dody et al. and USPN 5,632,326 to Gough.

Rancoulle teaches a refractory article having an insulating coat slurry (made from an aqueous suspension) comprising 30-85% by weight of fused silica and 0-10% ceramic fibers (ceramic matrix), 0-7% binders, and 15-30% water (see col. 2+). Rancoulle is silent to teaching the insulating composition comprising metal or insulating microspheres. Dody teaches the use of ceramic microspheres in refractory disposable lining composition materials (composed additionally of a ceramic matrix, water, binders, and other additives) in molten metal containing vessels. Dody explains the advantages of using ceramic microspheres in these lining compositions are primarily attributed to reducing open porosity which improves resistance to corrosion and cracking (see col. 2 and col. 3). Furthermore, Gough discloses a refractory insulating composition comprising metal and insulating microspheres coated over a mold for use in casting of metals. Gough discloses such a composition containing insulating hollow microspheres that contain alumina and silica with at least about 40% by weight of alumina, which are suitable for use with non-ferrous metals like aluminum, iron, and steel (see col. 3, line 6+). Gough further discloses the composition may also contain a readily oxidisable metal such as aluminum (12 % by weight), magnesium, silicon, or an alloy containing a major portion of one or more of these metals (see col. 3, line 35+) with a fluoride salt in order for the composition

Art Unit: 1774

to be both exothermic and heat-insulating in use. Therefore it would be obvious to one with ordinary skill in the art to have modified a refractory article as taught by Rancoulle where the insulating coat composition comprises insulating microspheres and metal as suggested by Dody and Gough with the claimed weight percentages in order to improve the resistance to corrosion and cracking of the refractory article in order for the refractory article to be heat-insulating in use. No patentable distinction is seen.

Response to Argument

Applicant's arguments filed July 10, 2002 have been fully considered but they are not persuasive. Applicant's arguments do not comply with 37 CFR 1.111(c) because they do not clearly point out the patentable novelty which he or she thinks the claims present in view of the state of the art disclosed by the references cited or the objections made. Further, they do not show how the amendments avoid such references or objections.

Regarding the 102(b) rejection, Applicant contends Rancoulle does not teach a glaze coating over an insulating coating and, consequently, cannot anticipate the present application. The Examiner does not agree. First, Rancoulle clearly teaches a glaze over an insulating coating- he *claims* the very structure stating the glaze interfaces the insulative coat. Secondly, independent claim 1 of the instant application does not state "a glaze coating over an insulating coating". Claim 1 of the instant application states a glaze covers at least a portion of the insulative coating, this is equivalent to Rancoulle claiming glaze interfacing the insulative coat of the refractory article of claim 1. It is noted that the features upon which applicant relies (i.e., "a glaze coating over an insulating coating") are not recited in the rejected claim. Although the claims are interpreted in light of the specification, limitations from the specification are not read

Art Unit: 1774

into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). The rejection is maintained.

Regarding the 103(a) rejection of claims 1-6, the Applicant asserts that both Rancoulle and Benson are both owned by the same assignee and thereby neither reference renders obviousness. The Examiner disagrees. Assignments do not present obviousness in a 103 rejection.

The Applicant further asserts that neither Rancoulle or Benson identify a problem nor suggest a solution. The Examiner does not agree. References do not have to identify a problem nor suggest a solution to present obviousness. The mere suggestion of any reference is enough to satisfy obviousness.

The Applicant urges that neither Rancoulle nor Benson teach the combination of elements. The Examiner disagrees for reasons of record. If it is Applicant's intention to mean that the references are not analogous; again, the Examiner disagrees. Both Rancoulle and Benson are analogous art because both references are in the same field of endeavor such as the production of refractory and molten vessels/articles technology.

Regarding the 103(a) rejection of claim 5, the Applicant defends that since claim 1 is allowable so is claim 5. The Examiner disagrees for reasons of record.

Conclusion

1. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO**

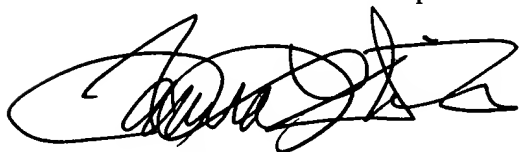
Art Unit: 1774

MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tamra L. Dicus whose telephone number is (703) 305-3809. The examiner can normally be reached on Monday-Friday, 7:00-4:30 p.m., alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia Kelly can be reached on (703) 308-0449. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-8329 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



Tamra L. Dicus
Examiner
Art Unit 1774

October 9, 2002

CYNTHIA H. KELLY
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700

